

SOA Case Study

amazon.com.

AUCTIONS

AR
COLLEC

WELCOME

BOOKS

M

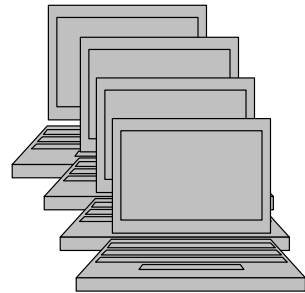
SEARCH

BROWSE
CATEGORIES

"For over 17 years, ISS has been assisting clients transform their IT departments into agile, responsive organizations that successfully deliver high quality business-aligned solutions on time and on budget... meeting or exceeding customer expectations."

Source: Interview with Werner Vogels, ACM Queue

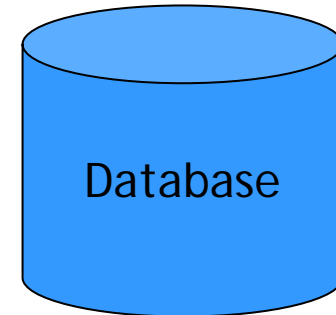
"Obidos"



Web App

Web App

Web App



Database

Single application

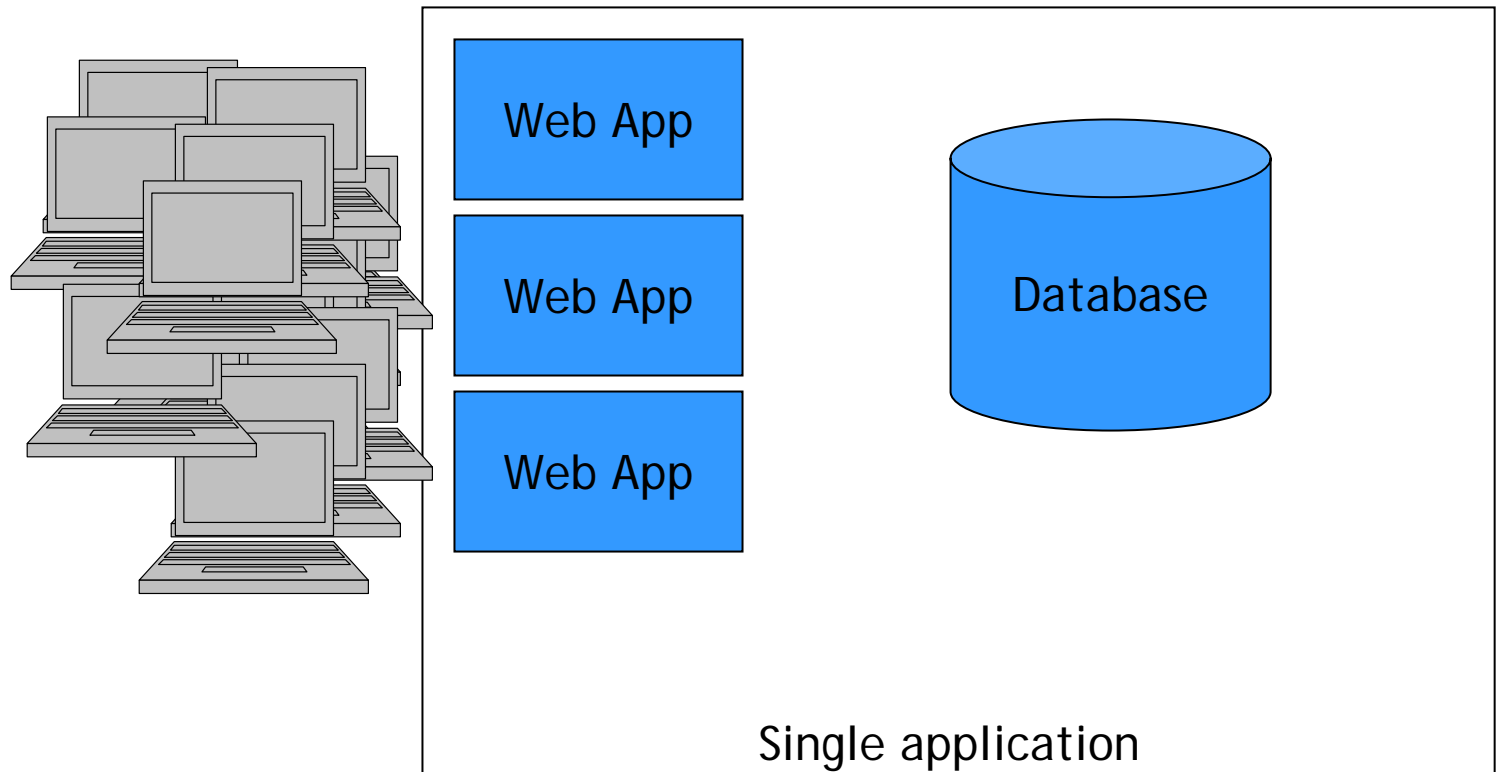
"For over 17 years, ISS has been assisting clients transform their IT departments into agile, responsive organizations that successfully deliver high quality business-aligned solutions on time and on budget... meeting or exceeding customer expectations."

But it was Successful!



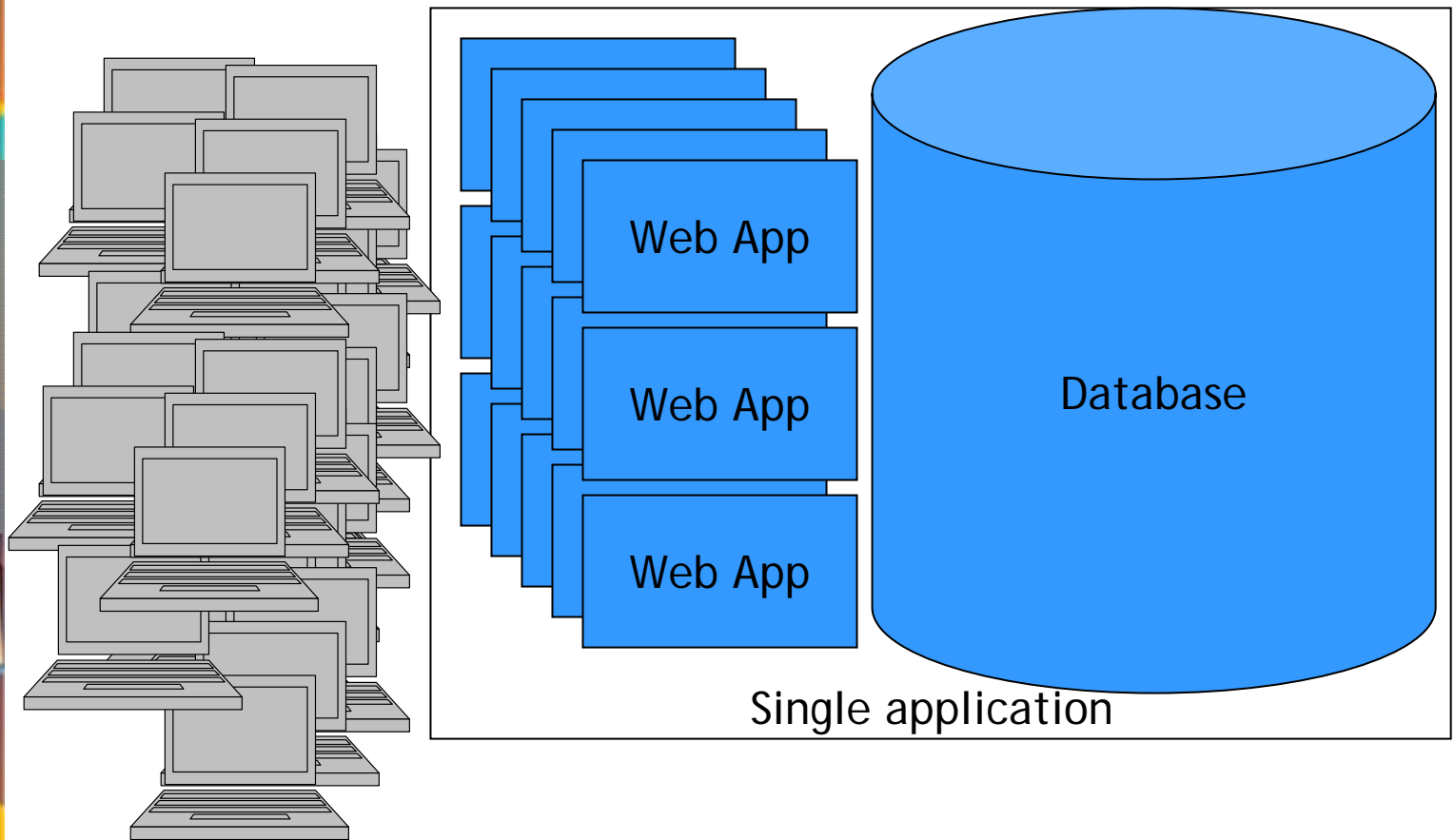
"For over 17 years, ISS has been assisting clients transform their IT departments into agile, responsive organizations that successfully deliver high quality business-aligned solutions on time and on budget... meeting or exceeding customer expectations."

Internet Scale Up



"For over 17 years, ISS has been assisting clients transform their IT departments into agile, responsive organizations that successfully deliver high quality business-aligned solutions on time and on budget... meeting or exceeding customer expectations."

... to bursting point





Problems

- Too many complex pieces of software in a single system
- No evolution possible
- Need to scale independently
 - Parts sharing resources with other unknown code paths
- No isolation
- No clear *ownership*

"For over 17 years, ISS has been assisting clients transform their IT departments into agile, responsive organizations that successfully deliver high quality business-aligned solutions on time and on budget... meeting or exceeding customer expectations."



Database scaling

- Databases a shared resource
- Hard to scale-out
- Front-end and backend shared by
 - Too many teams
 - Too many processes

"For over 17 years, ISS has been assisting clients transform their IT departments into agile, responsive organizations that successfully deliver high quality business-aligned solutions on time and on budget... meeting or exceeding customer expectations."



A new model

- In 2001 decided on a new approach
- SOA based – even before the term was in common usage
- Encapsulating the data with the business logic that operates on the data
- Only access through a published service interface
- No direct database access is allowed from outside the service
- No data sharing among the services.

"For over 17 years, ISS has been assisting clients transform their IT departments into agile, responsive organizations that successfully deliver high quality business-aligned solutions on time and on budget... meeting or exceeding customer expectations."





Growth

- Amazon services in the hundreds
- A typical visit to the homepage may include calls to 100 services
- Caching reduces the actual network traffic
- Fully distributed, decentralized
- The web servers are just one client into the service fabric

"For over 17 years, ISS has been assisting clients transform their IT departments into agile, responsive organizations that successfully deliver high quality business-aligned solutions on time and on budget... meeting or exceeding customer expectations."

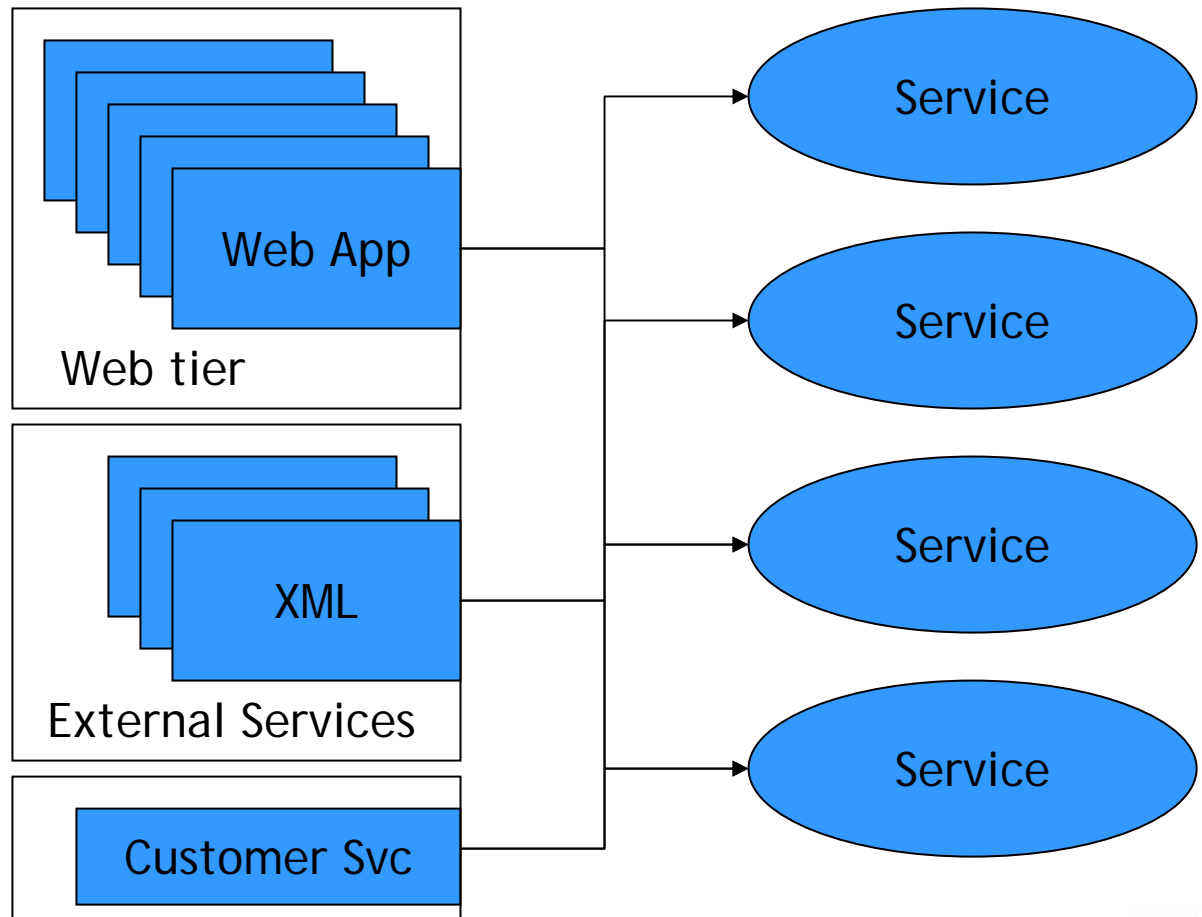


Matched by business growth

- Amazon is supporting many new businesses
- Books, CDs, Electronics, Toys, Tools and Hardware,...
- Plus millions of independent retailers sharing the Amazon platform

"For over 17 years, ISS has been assisting clients transform their IT departments into agile, responsive organizations that successfully deliver high quality business-aligned solutions on time and on budget... meeting or exceeding customer expectations."

New architecture





Lessons learnt

- Isolation
 - Service Orientation promotes ownership and control
- Scalability
 - By preventing direct database access, can scale the services without affecting clients
- Need a common service-access mechanism
 - Aggregation
 - Routing
 - Tracking

"For over 17 years, ISS has been assisting clients transform their IT departments into agile, responsive organizations that successfully deliver high quality business-aligned solutions on time and on budget... meeting or exceeding customer expectations."





Organization

- “Each service has a team associated with it, and that team is completely responsible for the service—from scoping out the functionality, to architecting it, to building it, and operating it... ***You build it, you run it***”
Werner Vogels, CTO, Amazon
 - Promotes Customer Focus and Innovation
 - Gives developers direct access to customers
 - And experience of how their code performs

“For over 17 years, ISS has been assisting clients transform their IT departments into agile, responsive organizations that successfully deliver high quality business-aligned solutions on time and on budget... meeting or exceeding customer expectations.”



SOA drives innovation

- Amazon.com is now available
 - To any developer in the world
 - through a Web services interface
 - free of charge
- *Driving innovations that Amazon didn't expect or think of*

"For over 17 years, ISS has been assisting clients transform their IT departments into agile, responsive organizations that successfully deliver high quality business-aligned solutions on time and on budget... meeting or exceeding customer expectations."



Challenges for SOA

- How do you measure developer productivity
- How to ensure all the parts work together?
- Testing – how do you test a distributed system that relies on many production systems?
- *More to come later*

"For over 17 years, ISS has been assisting clients transform their IT departments into agile, responsive organizations that successfully deliver high quality business-aligned solutions on time and on budget... meeting or exceeding customer expectations."



Summary

- SOA doesn't just scale technically
- But also from an organizational standpoint
- Aligning the IT to business enables business to move faster
 - But also enables new business innovation

"For over 17 years, ISS has been assisting clients transform their IT departments into agile, responsive organizations that successfully deliver high quality business-aligned solutions on time and on budget... meeting or exceeding customer expectations."

Questions?



"For over 17 years, ISS has been assisting clients transform their IT departments into agile, responsive organizations that successfully deliver high quality business-aligned solutions on time and on budget... meeting or exceeding customer expectations."

